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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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7590 12/23/2008
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EXAMINER

WONG, LINDA

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

12/23/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/678,685	DOUMA ET AL.	
	Examiner	Art Unit	
	LINDA WONG	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/10/2008 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1,2,6,7,9,10,11,12,14-16,19,20,24-26** are rejected under 35 U.S.C. 102(b) as being anticipated by Lutz (U.S. Patent No.: 4276548).
 - a. **Claim 1**, Lutz discloses:
 - “an output adapted to couple to a host device” (Fig. 1, labels 22,24,12 as the host device.)
 - “a controller chip that includes a phase locked loop adapted to operate in a hunting mode and a locked mode” (Fig. 1, label 10 shows the controller chip, label 14 as the phase locked loop, Col. 3, lines 49-65 discloses the hunting period occurs when the output on line 44 is random or noisy nature

and the lock detector and timer senses the random nature of the synchronization signal, label 44 as shown in Fig. 1.)

- “wherein, the phase locked loop is further adapted to assert a synchronization signal in the hunting mode when a hunting frequency passes through a data signal frequency” (Col. 3, lines 49-55 discloses hunting occurs when the synchronization of the frequency of the internal oscillator is not synchronized with the frequency of a coherent component of the difference signal.)
- “wherein the phase locked loop is further adapted to keep the synchronization signal asserted as long as the phase locked loop is locked onto a data signal” (Col. 3, lines 49-65 discloses the phase locked loop outputs a constant level DC signal when the is synchronized. “Lock detector and timer includes suitable circuitry for sensing the random nature of the lock signal and for developing on the line a stabilization signal of predetermined period after the lock signal has stabilized.”)
- “a timing circuit adapted to measure a period of time that the synchronization signal is asserted and to produce a lock signal if the synchronization signal is asserted for at least a specified period of time” (Fig. 1, label 16 shows a lock detector and timer. Col. 3, lines 49-65 disclose “Lock detector and timer includes suitable circuitry for sensing the random nature of the lock signal and for developing on the line a

stabilization signal of predetermined period after the lock signal has stabilized.”)

- b. **Claim 2**, Lutz discloses “the timing circuit is an analog timer comprising a capacitor and resistor network.” (Fig. 3a, label 16 shows the lock detector and timer, wherein the block has a network of resistors and capacitors.)
- c. **Claim 3**, Lutz discloses “the timing circuit comprises a transistor for resetting the timing circuit” (Fig. 1, label 18 is a timer for resetting the timing circuit, label 16, wherein the timer has a transistor, label 342.)
- d. **Claims 6,11,12**,
 - Lutz discloses “an input level detector that compares the synchronization signal with a reference signal and produces logical signals within the timing circuit”. (Fig. 3a, label 16, timing circuit, shows an operational amplifier or comparator, label 300, for receiving the synchronization signal, label 44, and comparing the signal with a reference signal, input to label +. Col. 8, lines 8-15 discloses “lacking the random excursions, the signal will no longer cause the potential developed at the inverting input of the operational-amplifier 300 to exceed the potential developed at its non-inverting input.”)
- e. **Claim 7**,
 - Lutz discloses “a comparator that receives a signal from the capacitor and resistor network and a reference signal as input and that outputs the lock signal to the host device based on the value of the reference signal

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compared to the signal from the capacitor and resistor network". (Fig. 3a, label 16, timing circuit, shows an operational amplifier or comparator, label 300, for receiving the synchronization signal, label 44, and comparing the signal with a reference signal, input to label +. Col. 8, lines 8-15 discloses "lacking the random excursions, the signal will no longer cause the potential developed at the inverting input of the operational-amplifier 300 to exceed the potential developed at its non-inverting input." Fig. 3a, label 16 shows a network of capacitors and resistors connected to the comparator or operational amplifier, label 300.)

f. **Claim 9**, Lutz discloses

- "an output adapted to couple to a host device" (Fig. 1, labels 22,24,12 as the host device.)
- "a controller chip having a phase locked loop that is adapted to operate in a hunting mode" (Fig. 1, label 10 shows the controller chip, label 14 as the phase locked loop, Col. 3, lines 49-65 discloses the hunting period occurs when the output on line 44 is random or noisy nature and the lock detector and timer senses the random nature of the synchronization signal, label 44 as shown in Fig. 1.)
- Hunting mode "in which the phase locked loop briefly asserts a synchronization signal when a hunting frequency passes through a data signal frequency". (Col. 3, lines 49-55 discloses hunting occurs when the synchronization of the frequency of the internal oscillator is not

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synchronized with the frequency of a coherent component of the difference signal.)

- “and that is adapted to operate in a locked mode in which the phase locked loop asserts the synchronization signal so long as the phase locked loop is locked onto a data signal” (Col. 3, lines 49-65 discloses the phase locked loop outputs a constant level DC signal when the is synchronized. “Lock detector and timer includes suitable circuitry for sensing the random nature of the lock signal and for developing on the line a stabilization signal of predetermined period after the lock signal has stabilized.”)
- “a translation circuit adapted to convert the synchronization signal from the controller chip to a lock signal usable by the host device” (Fig. 1, labels 16,18,20 converts the synchronization signal from the controller chip, label 14 to a lock signal usable by the host device, labels 22,24,12.)
- “wherein a logic level of the lock signal is asserted when the phase locked loop is locked onto a data signal and is de-asserted when the phase locked loop asserts the synchronization signal in hunting mode.” (Fig. 1, label 16 shows a lock detector and timer. Col. 3, lines 49-65 disclose “Lock detector and timer includes suitable circuitry for sensing the random nature of the lock signal and for developing on the line a stabilization signal of predetermined period after the lock signal has stabilized.” Lines 49-55 discloses the hunting mode occurrence.)

- g. **Claim 10**, Lutz discloses “the translation circuit comprising a timer adapted to measure a period of time that the synchronization signal is asserted.” (Fig. 1, label 16 and 18 for resetting the timing.)
- h. **Claim 14**, Lutz discloses
- receiving an asserted synchronization signal from a phase locked loop, the phase locked loop disposed on the controller chip (Fig. 1, label 10 shows the controller chip, label 44 as the synchronization signal outputted from label 14, phase locked loop.);
 - determining whether the synchronization signal is caused by the phase locked loop locking onto a data signal or by the phase locked loop passing a hunting frequency through a data signal frequency (Col. 3, lines 49-65 discloses the hunting period occurs when the output on line 44 is random or noisy nature and the lock detector and timer senses the random nature of the synchronization signal, label 44 as shown in Fig. 1.)
 - asserting a lock signal if the phase locked loop has locked onto a data signal (Col. 3, lines 55-60 discloses the lock detector and timer determines whether the synchronization signal is stabilized after a predetermined period.)
- i. **Claim 15**, Lutz discloses
- “measuring a period of time that the synchronization signal is asserted” (Col. 8, lines 8-15 discloses “lacking the random excursions, the signal will no longer cause the potential developed at the inverting input of the

operational-amplifier 300 to exceed the potential developed at its non-inverting input.")

- "determining that the synchronization signal is caused by the phase locked loop locking onto the data signal if the period of time that the synchronization signal is asserted is greater than a specified period of time." (Col. 3, lines 55-60 discloses "Lock detector and timer 16 includes suitable circuitry for sensing the random nature of the lock signal and for developing on a line 46 a (stabilization signal) of predetermined period after the lock signal has stabilized.")
- j. **Claim 16**, Lutz discloses "comparing the asserted synchronization signal with a reference signal to determine if the asserted synchronization signal is produced by the phase locked loop locking onto a data signal or by the phase locked loop passing a hunting frequency through the data signal frequency." (Col. 3, lines 55-60 discloses "Lock detector and timer 16 includes suitable circuitry for sensing the random nature of the lock signal and for developing on a line 46 a (stabilization signal) of predetermined period after the lock signal has stabilized." Col. 3, lines 49-55 describes the hunting mode.)
- k. **Claim 19**, Lutz discloses
 - "a timing circuit adapted to measure a period of time that the synchronization signal is asserted using at least a capacitor, wherein the timing circuit is further adapted to generate an output signal having a voltage across the capacitor" (Col. 3, lines 55-60 discloses "Lock detector

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and timer 16 includes suitable circuitry for sensing the random nature of the lock signal and for developing on a line 46 a (stabilization signal) of predetermined period after the lock signal has stabilized." Col. 8, lines 8-15 discloses "lacking the random excursions, the signal will no longer cause the potential developed at the inverting input of the operational-amplifier 300 to exceed the potential developed at its non-inverting input." Col. 8, lines 19-22 discloses "A predetermined time after synchronization is achieved, the potential developed across capacitor 318 will rise to a level which will trigger timer 18 ..." Fig. 3a, label 318 shows the Voltage of the output would be across the such a capacitor.)

- "a comparator circuit adapted to compare the output signal with a reference signal such that a lock signal is not asserted unless the comparison of the output signal with the reference signal indicates that the period of time that the synchronization signal is asserted exceeds a minimum period of time"(Col. 3, lines 55-60 discloses "Lock detector and timer 16 includes suitable circuitry for sensing the random nature of the lock signal and for developing on a line 46 a (stabilization signal) of predetermined period after the lock signal has stabilized." Col. 8, lines 8-15 discloses "lacking the random excursions, the signal will no longer cause the potential developed at the inverting input of the operational-amplifier 300 to exceed the potential developed at its non-inverting input.")

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- l. **Claim 20**, Lutz discloses “the timing circuit comprises a transistor that is controlled by the synchronization signal for resetting the timing circuit such that the capacitor discharges.” (Fig. 1, label 18 is a timer for resetting the timing circuit, label 16, wherein the timer has a transistor, Fig. 3b, label 342. Fig. 3a, label 16 shows the synchronization signal controls the lock detector and timing component, label 16. Based on the information from the synchronization signal, label 16 outputs information to label 18, timer, where the transistor determines resetting mode.)
- m. **Claim 24**, Lutz discloses “an input level detector that passes the synchronization signal to the timing circuit when the synchronization signal exceeds a reference voltage.” (Col. 3, lines 55-60 discloses “Lock detector and timer 16 includes suitable circuitry for sensing the random nature of the lock signal and for developing on a line 46 a (stabilization signal) of predetermined period after the lock signal has stabilized.” Col. 8, lines 8-15 discloses “lacking the random excursions, the signal will no longer cause the potential developed at the inverting input of the operational-amplifier 300 to exceed the potential developed at its non-inverting input.” Col. 8, lines 19-22 discloses “A predetermined time after synchronization is achieved, the potential developed across capacitor 318 will rise to a level which will trigger timer 18 ...” Fig. 3a, label 318 shows the Voltage of the output would be across the such a capacitor.)
- n. **Claims 25,26**, Lutz discloses

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- "the capacitor is adapted to charge at a rate slower than a rate at which the capacitor discharges" or "the capacitor is adapted to charge at a rate faster than a rate at which the capacitor discharges". (Capacitors discharges with an exponential decrease and charges with an exponential increase. At some points of the exponential curve, the rate of discharge would be slower than charging and at others, the rate would be faster.)
- "the comparator circuit is adapted to assert the lock signal when the voltage across the capacitor exceeds the reference signal" (Col. 3, lines 55-60 discloses "Lock detector and timer 16 includes suitable circuitry for sensing the random nature of the lock signal and for developing on a line 46 a (stabilization signal) of predetermined period after the lock signal has stabilized." Col. 8, lines 8-15 discloses "lacking the random excursions, the signal will no longer cause the potential developed at the inverting input of the operational-amplifier 300 to exceed the potential developed at its non-inverting input.")

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. **Claims 4,5,21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lutz as applied to claims 1,14, respectively, in view of Transistors Non-Patent Literature.
- a. **Claim 4**, Lutz fails to disclose the type of transistors used in his timer, however, Transistors Non-Patent Literature discloses transistor is at least one of a PNP and NPN bipolar junction transistor (p. 3, The NPN Transistor). Because NPN transistor are well known in the art as low cost transistor with low power consumption at low voltage levels, it would have been obvious to one skilled in the art at the time of invention to incorporate a NPN transistor as disclosed by Transistors Non-Patent Literature into the combined invention disclosed by Lutz.
- b. **Claim 5**, Lutz fails to disclose the type of transistors used in his timer, however, Transistors Non-Patent Literature discloses transistor is a field effect transistor (p. 3, FET's as Transistors). Because FET transistor are well known in the art as low cost transistor which can operate at high voltage levels, it would have been obvious to one skilled in the art at the time of invention to incorporate a FET transistor as disclosed by Transistors Non-Patent Literature into the combined invention disclosed by Lutz.
- c. **Claim 21**, Lutz fails to disclose the type of transistors used in his timer, however, Transistors Non-Patent Literature discloses transistor is at least one of a PNP and NPN bipolar junction transistor (p. 3, The NPN Transistor). Because NPN transistor are well known in the art as low cost transistor with low power consumption at low voltage levels. It would have been obvious to one

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skilled in the art at the time of invention to incorporate a NPN transistor as disclosed by Transistors Non-Patent Literature into the combined invention disclosed by Lutz.

4. **Claim 17** is rejected under 35 U.S.C. 103(a) as being unpatentable over Lutz as applied to claim 14, in view of Rumbaugh (US Patent No. 6275144).

a. **Claim 17**,

- Lutz discloses "comparing the lock signal with a reference signal to produce the lock signal useful by a host device". (Fig. 3a, label 16, timing circuit, shows an operational amplifier or comparator, label 300, for receiving the synchronization signal, label 44, and comparing the signal with a reference signal, input to label +. Col. 8, lines 8-15 discloses "lacking the random excursions, the signal will no longer cause the potential developed at the inverting input of the operational-amplifier 300 to exceed the potential developed at its non-inverting input." Fig. 1, labels 22,24,12 shows the host device.)
- Lutz fails to disclose the host device is connected to a fiber optic transponder.
- Rumbaugh discloses connection using fiber optics. (Fig. 3 shows the connections. Col. 4, lines 39-41 discloses a fiber optic interface device.) It would have been obvious to one skilled in the art at the time of the invention

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to connect the system as shown by Lutz to a fiber optics device as shown by Rumbaugh so to provide better and quicker transmission.

5. **Claims 8,13,18,22,23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lutz as applied to claims 7,12,14,19,22, respectively, in view of IBM Technical Disclosure Bulletin, May 1990.

a. **Claim 8,**

- Lutz fail to disclose a comparator includes feedback that changes a logical level of the lock signal output to the host device when the value of the lock signal changes by some value greater than a hysteresis threshold value.
- IBM Technical Disclosure Bulletin, May 1990 discloses a comparator includes feedback that changes a logical level of the lock signal output to the host device when the value of the lock signal changes by some value greater than a hysteresis threshold value (see part 3 and figure 2). The disclosure further states that this scheme has the advantage of providing a stabilized synchronization acquisition (part 3, lines 2-3). Because of this advantage it would have been obvious to one skilled in the art a the time of invention to incorporate the phase lock as disclosed by the IBM Technical Disclosure Bulletin, May 1990 into the combined invention of Lutz and Lee.

b. **Claim 13,** Lutz fails to disclose a comparator includes feedback that changes a logical level of the lock signal output to the host device when the value of the lock signal changes by some value greater than a hysteresis threshold value.

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However, IBM Technical Disclosure Bulletin, May 1990 discloses a comparator includes feedback that changes a logical level of the lock signal output to the host device when the value of the lock signal changes by some value greater than a hysteresis threshold value (see part 3 and figure 2). The disclosure further states that this scheme has the advantage of providing a stabilized synchronization acquisition (part 3, lines 2-3). Because of this advantage it would have been obvious to one skilled in the art at the time of invention to incorporate the phase lock as disclosed by the IBM Technical Disclosure Bulletin, May 1990 into the combined invention of Lutz and Lee.

- c. **Claim 18**, Lutz fails to disclose a comparator includes feedback that changes a logical level of the lock signal output to the host device when the value of the lock signal changes by some value greater than a hysteresis threshold value. However, IBM Technical Disclosure Bulletin, May 1990 discloses a comparator includes feedback that changes a logical level of the lock signal output to the host device when the value of the lock signal changes by some value greater than a hysteresis threshold value (see part 3 and figure 2). The disclosure further states that this scheme has the advantage of providing a stabilized synchronization acquisition (part 3, lines 2-3). Because of this advantage it would have been obvious to one skilled in the art at the time of invention to incorporate the phase lock as disclosed by the IBM Technical Disclosure Bulletin, May 1990 into the invention of Lutz.

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- d. **Claims 22, 23**, Lutz fails to disclose a comparator includes feedback that changes a logical level of the lock signal output to the host device when the value of the lock signal changes by some value greater than a hysteresis threshold value. However, IBM Technical Disclosure Bulletin, May 1990 discloses a comparator includes feedback that changes a logical level of the lock signal output to the host device when the value of the lock signal changes by some value greater than a hysteresis threshold value (see part 3 and figure 2). The disclosure further states that this scheme has the advantage of providing a stabilized synchronization acquisition (part 3, lines 2-3). Because of this advantage it would have been obvious to one skilled in the art at the time of invention to incorporate the phase lock as disclosed by the IBM Technical Disclosure Bulletin, May 1990 into the combined invention of Lutz.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
- a. Meltzer (US Publication No.: 20030112915)
 - b. Lee (US Publication No.: 20020094054)
 - c. Eom (US Publication No.: 20020084859)
 - d. Nishimura et al (US Patent No.: 6392641).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to LINDA WONG whose telephone number is (571)272-6044. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Linda Wong
12/19/2008

/David C. Payne/
Supervisory Patent Examiner, Art Unit 2611